4 March 2011

V. Frank Stone, Ph.D.
Director, Marine Mammal Research and Development Program
Chief of Naval Operations
Environmental Readiness Division (N45)
2511 Jefferson Davis Highway, #2000
Arlington, VA 22202

Dear Dr. Stone:

The Marine Mammal Commission, in consultation with its Committee of Scientific Advisors on Marine Mammals, has reviewed the U.S. Navy's revised Integrated Comprehensive Monitoring Program plan, dated 20 December 2010. The Commission offers the following recommendations and rationale.

RECOMMENDATIONS

The Marine Mammal Commission—

- requests that, when feasible, the Navy continue to include the Commission in meetings where the Navy and the National Marine Fisheries Service are addressing matters pertaining to the Integrated Comprehensive Monitoring Program and the potential effects of Navy activities on marine mammals;
- supports the emphasis given in the program plan to assessing the efficacy of monitoring methods as a means of validating monitoring results;
- recommends that, as performance information becomes available, the Navy identify standards that should be applied across multiple range complexes and integrate those standards into the respective range-specific monitoring programs;
- recommends that the Navy continue to support studies to better understand the effects of sonar on marine mammals, including sonar-related changes in behavior and pathological changes that may occur as a result of exposure to sonar; and
- supports the Navy's inclusion of baseline conditions and cumulative effects in the Integrated Comprehensive Monitoring Program plan and recommends that the Navy continue to pursue related studies as it develops its range-specific monitoring programs.

RATIONALE

Over the past decade, the Marine Mammal Commission has raised questions and made recommendations to the Navy regarding its monitoring methods during activities that could take marine mammals. Many of these activities involve the use of low- and mid-frequency active sonars. The Commission has made similar recommendations to other agencies and organizations whose activities also introduce sound into the marine environment, such as seismic studies related to oil and gas operations. The Commission's principal concern with regard to monitoring methods has been whether they provide reliable information on the number and nature of takes of marine mammals during the course of those sound-producing activities. That question is central to the issue

of whether such activities have no more than a negligible impact on marine mammal populations, which is a requirement for incidental take and harassment authorizations. For the past several years, the Navy has responded to the Commission's concerns and recommendations by indicating that it was developing an Integrated Comprehensive Monitoring Program plan and that the plan would address the points raised by the Commission.

The Commission viewed the original 23 December 2009 Integrated Comprehensive Monitoring Program plan as a major step toward better monitoring, and the Commission's recommendations at that time were intended to reinforce and improve it. The 20 December 2010 revision takes into account recommendations and feedback from the National Marine Fisheries Service, the Commission, and others. The changes made substantiate the Navy's continued commitment to understanding and minimizing the impact of its actions on marine mammals, ensuring that it meets the negligible impact standard, and upholding its goal of being a good steward of the marine environment. The revised plan expands top-level goals, gives guidance for developing and implementing range-specific monitoring programs, establishes a framework to better characterize individual Navy range complexes/study areas, and promotes development of data management and access procedures. In addition, the Navy has committed resources, sponsored activities (e.g., workshops), and engaged many of the nation's experts in studying and mitigating the sound-related effects of Navy activities. The Commission acknowledges and credits the Navy for its continued development of an Integrated Comprehensive Monitoring Program plan.

Still, much remains to be done. The following recommendations—some of which have been made before—are intended to help the Navy as it continues to develop this important program.

Adaptive Management Review

The Marine Mammal Commission is charged with providing oversight and advice with regard to the activities of federal agencies, including the Navy and the National Marine Fisheries Service. The Navy and the Service's Office of Protected Resources have been working together to ensure that the Navy meets its environmental responsibilities associated with its many and varied activities. The Commission believes that close consultation between the two agencies has been essential for the continued development of the Integrated Comprehensive Monitoring Program plan and should be continued. Among other things, the consultation provides an opportunity to avoid miscommunication about highly technical matters that determine or influence the potential for Navy activities to affect marine mammals. In its oversight role, the Marine Mammal Commission also benefits from participating in those meetings so that Commission staff can be apprised of pertinent information firsthand, ask questions in a timely fashion, and perhaps provide suggestions for improving aspects of the program. With those benefits in mind, the Marine Mammal Commission requests that, when feasible, the Navy continue to include the Commission in meetings where the Navy and the National Marine Fisheries Service are addressing matters pertaining to the Integrated Comprehensive Monitoring Program and potential effects of Navy activities on marine mammals.

Evaluating Monitoring Results versus Efficacy

The Integrated Comprehensive Monitoring Program plan recognizes the important distinction between monitoring results and monitoring efficacy. Often the results are deemed more important because they help managers form conclusions as to whether certain activities have specific effects. However, to be confident in their conclusions, managers also need to know that the available results are a reliable indicator of actual effects. For that reason, the Marine Mammal Commission has long stressed the need for the Navy and other agencies and organizations that undertake marine activities to evaluate the efficacy of their monitoring methods. Therefore, the Marine Mammal Commission supports the emphasis given in the program plan to assessing the efficacy of monitoring methods as a means of validating monitoring results.

Standards for Monitoring Methods

The program plan provides a framework that the individual range complexes will follow to develop their specific monitoring plans and studies. At least to a degree, it makes sense that tailored approaches are needed for each range complex because they differ with respect to activities and environmental conditions. At the same time, however, the full array of available monitoring methods is limited, and the different range complexes may be implementing monitoring plans that, while differing to a degree, also have many common features. As the Navy implements the program plan, it should see opportunities to apply similar or consistent monitoring standards across some or all range complexes. For example, the Navy may wish to set performance standards for watchstanders, passive and active acoustic monitoring methods, or aerial and shipboard surveys conducted before and after exercises. When feasible, imposing such standards is a way of ensuring that the best possible monitoring methods are being applied in all range complexes. With that in mind, the Marine Mammal Commission recommends that, as performance information becomes available, the Navy identify standards that should be applied across multiple range complexes and integrate those standards into the respective range-specific monitoring programs.

Marine Mammal Behavioral Responses

Under certain circumstances, mid-frequency sonar can lead to the serious injury or death of marine mammals. Consequences may occur as a result of sound exposure but appear to be more closely linked to behavioral responses to the sound. Responses may vary from those that are temporary and biologically insignificant to those with adverse effects on survival or reproduction. Such responses might displace animals from important or even essential habitat, disrupt social bonds, cause long-term physiological stress, or impair the animals' physical condition. Serious injury and death are not expected to be common, although even uncommon events may pose serious risk to small, vulnerable populations. The Navy's sponsorship of behavioral response studies at the Atlantic Undersea Test and Evaluation Center and more recently in the Southern California Range Complex already have proven highly informative and useful for studying the behavioral responses of marine mammals to Navy sonar and other sounds. The 2006 report resulting from a Marine Mammal Commission workshop strongly recommended such studies, and the Commission continues to believe they are essential if scientists are to describe, fully and confidently, the

responses of marine mammals to such sounds. In addition, The Commission believes that more work is needed to investigate the types of pathology that may result when marine mammals are exposed to sonar. Animals that strand after such exposure provide an important opportunity for such study. With all these needs in mind, the Marine Mammal Commission recommends that the Navy continue to support studies to better understand the effects of sonar on marine mammals, including sonar-related changes in behavior and pathological changes that may occur as a result of exposure to sonar. The information from such studies, combined with effective monitoring, will provide a better basis for evaluating the effects of sonar and identifying ways to minimize those effects.

Baseline Conditions and Cumulative Effects

Ultimately, ensuring that Navy activities have no more than negligible effects on marine mammal stocks and their habitats will depend on assessments of baseline conditions and evaluation of cumulative effects, both of which require long-term studies and extensive data. Given the inherent variability in marine mammal demography and behavior, so-called "baseline" conditions might be more accurately characterized as "base-range" conditions because they require measures of central tendency (e.g., means, medians, modes) and variability (e.g., standard errors, standard deviations, variances). The required data may be difficult to collect and may encompass multiple sources of variation over time, space, and/or other factors. Analyses of cumulative effects also require extensive amounts of data, particularly when the relationships involved appear insignificant on an individual basis but potentially significant when combined.

The Integrated Comprehensive Monitoring Program document acknowledges the need for assessing baseline conditions and for assessing cumulative effects. The Navy's work on these topics will benefit marine mammals directly by further clarifying the mechanisms by which Navy operations may affect them and will benefit them generally by providing new and important information on the abundance, density, distribution, and behavior of marine mammals and their responses to human-generated sound—information that otherwise might not be available. In this regard, the Marine Mammal Commission supports the Navy's inclusion of baseline conditions and cumulative effects in the Integrated Comprehensive Monitoring Program plan and recommends that the Navy continue to pursue related studies as it develops its range-specific monitoring programs.

Please contact me if you have any questions regarding the Commission's recommendations.

Sincerely,

Michael L. Gosliner for

Timothy J. Ragen, Ph.D.
Executive Director

Cc: Mr. James H. Lecky
Mr. P. Michael Payne
Mr. John Quinn
Mr. Donald Schregardus